**Cleaning Water Usage Dataset to focus on variables of interest**

**Domestic Use:**

1. **Domestic\_Total\_Self\_Supplied (DO.WFrTo)**: The total self-supplied withdrawals, which is a comprehensive measure of domestic water use without public supply, meaning it's not provided by a public utility. It gives an idea of how much water households are sourcing themselves. Example: Wells or streams.
2. **Domestic\_Per\_Capita\_Self\_Supplied (DO.SSPCp)**: This is the per capita self-supplied water use. It's already normalized by population and will be useful for direct comparisons between counties of different sizes.As in each person self-supplies an average of 20 gallons/day.
3. **Domestic\_Per\_Capita\_Publicly\_Supplied (DO.PSPCp)**: This is the per capita use for publicly supplied water, another metric normalized by population.
4. **Domestic\_Total\_Use (DO.WDelv)**: This variable combines both self-supplied and publicly supplied water to give a complete measure of domestic water use.

* Depending on the granularity of the analysis, we can either focus on the most comprehensive measure (DO-WDelv) or break it down to see if self-supplied vs. publicly supplied makes a difference in the correlation with income (DO-SSPCp and DO-PSPCp).

**Industrial Use:**

1. **Industrial\_Total\_Groundwater (IN.WGWTo)**: This measures the total amount of groundwater used by industries.
2. **Industrial\_Total\_SurfaceWater (IN.WSWTo)**: Total surface-water withdrawals, including both fresh and saline water. Measuring how much surface water industries are self-supplying.
3. **Industrial\_Total\_Water (IN.Wtotl)**: This combines the above two to give a complete measure of industrial water use.

**Irrigation Use:**

* **Total\_Irrigation\_Withdrawal (IR.WFrTo)**: Total water withdrawals for irrigation, covering both groundwater and surface water.
* **Reclaimed\_Water\_Irrigation (IR.RecWW)**: How much reclaimed water (treated wastewater) is being used, which could be an interesting aspect related to sustain
* **Total\_Acres\_Irrigated (IR.IrTot)**: Total acres irrigated, useful for understanding the scale of irrigation in different counties.
* **Crop\_Irrigation\_Withdrawal (IC.WFrTo)**: Specifies the total water withdrawals specifically for crop irrigation.
* **Golf\_Irrigation\_Withdrawal (IG.WFrTo)**: This measures the water withdrawals for golf course irrigation, giving an idea of non-agricultural irrigation demands.

### Measuring units

- Median household income in dollars.

- Water withdrawal and usage variables, measured in Million Gallons per Day (Mgal/d).

- Per capita water usage rates, measured in gallons/day.

- Areas that are irrigated, measured in thousand acres.